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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/074,179
Filing Date: February 12, 2002
Appellant(s): LIN, QIAN

Timothy B. Kang
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/21/2006 appealing from the Office action mailed 8/25/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,298,198	INA et al	10-2001
6,134,339	LUO	10-2000
2002/0191861	CHEATLE	12-2002

6,016,354	LIN et al	01-2000

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

I. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ina et al. (U.S. 6,298,198) in view of Luo (U.S. 6,134,339).

Regarding claim 14, Ina '198 discloses a method for assessing the photo quality of a captured image in a digital camera (i.e., Fig. 2; col. 7, lines 45+), said method comprising:

checking, in-camera, the photo quality of the captured image to determined if the photo quality is acceptable (i.e., as shown in Figs. 7, 11 and 14, the quality of the captured image is determined by the controller 100/92 located in the camera 10; see col. 7, lines 50+, col. 8, lines 25+, and col. 9, lines 5+); and

providing a corresponding photo quality feedback (i.e., noted that the feedback image is display on the LCD 40 of the camera so as the quality of the image can be determined by the user during the image capturing process; see Fig. 14) to a camera user wherein said checking step further comprises: computing (i.e., by the controller 100/92) a face quality (i.e., noted the face quality of the image 28 as shown in Fig. 14) of merit for the captured image (i.e., the face quality of the image 30, 128, 130 and 134 as shown in Fig. 14 is computed by the controller 100/92; see col. 7, lines 50+, col. 8, lines 25+, and col. 9, lines 5+)

Furthermore, it is noted that although Ina '198 suggested the quality of the digital image can be analyzed to determine a blurred image (i.e., see col. 7, lines 45+) so that the quality of the captured image (i.e., the Face of the image as shown in Fig. 14) may be determined by the user (i.e., col. 7, lines 45+, and col. 8, lines 5+), Ina '198 does not explicitly state a face quality computing by *comparing said computed face quality figure of merit to a threshold to determine if said face quality figure of merit exceeds said threshold* as claimed.

However, computing, in a camera, a face quality figure of merit (i.e., computing "eye defect regions in the captured image as shown in Figs. 7 and 8) for the captured image by comparing the computed face quality figure of merit to a threshold to determine if the face quality figure of merit exceeds the threshold is well known in the art as taught by Luo '339 (i.e., see Figs. 4 and 5; col. 2, lines 15+, col. 7, lines 15+, col. 8, lines 40+, col. 11, lines 5+).

In view of the above, having the system of Ina '198 and then given the well-established teaching of Luo '339, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ina '198 as taught by Luo '339, since Luo '339 states at col. 4, lines 15+ that such a modification would enable enhancement and

manipulation of images containing one or more human faces, so that, red-eye correction can be reliably performed.

II. Claims 15-18 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ina '198 in view of Luo '339 as applied to claims as discussed above, and further in view of Cheatle (U.S. 2002/0191861).

Regarding claim 15, the combination of Ina '198 and Luo '339 discloses the step of detecting facial image data form the captured image (i.e., see the Examiner's comment with respect to claim 14 above). Further, the combination of Ina '198 and Luo '339 does not explicitly show the step of converting the detected image data from RGB color space into L*a*b* color space as claimed.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Cheatle '861. In particular, Cheatle '861 teaches the step detecting facial image data from the captured image (i.e., see paragraph 0059) and converting the detected image data from RGB color space into L*a*b* color space as claimed (Fig. 1, page 5, the paragraphs 0086-0089).

In view of the above, having the system of Ina '198 and then given the well-established teaching of Cheatle '861, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ina '198 as taught by Cheatle '861, since Cheatle '861 states at page 2, the paragraph 0011 that such a modification would provide a more convenient method for capturing and cropping electronic images thereof.

Regarding claim 16, the combination of Ina '198 and Luo '339 discloses the step of computing a brightness figure of merit (i.e., noted the computing steps 35-36 of Fig. 7 and steps 45-46 of Fig. 8 of Luo '339, for computing "high-intensity/Peak value" figure of merit); and Cheatle '861, on the other hand, teaches the computing the means of L* to obtain a brightness figure of merit (i.e., as shown in Figs. 1 and 2A/2B of Cheatle '861, the means of L* (i.e., see paragraphs 0086) is computed in the camera system 1 to obtain a brightness figure of merit (i.e., as discussed in paragraph 0089 of Cheatle '861, the computed CIELAB color space containing the means of L* is used to determine the "intensity/brightness" figure of merit as claimed); and determining if the brightness figure of merit (i.e., "intensity/brightness" figure of merit as disclosed in paragraph 0089 of Cheatle '861) falls within a brightness threshold range (i.e., as discussed in paragraph 0089 of Cheatle '861, the regions having the computed brightness/intensity differences values is compared with the threshold value to perform the region merging process).

In view of this, having the combination of Ina '198, and Luo '339 and discussed above and further teaching of Cheatle '861, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to provide a teaching of Cheatle '861 to the combination of Ina '198 and Luo '339 for the purpose of automatically cropping of electronic images in the camera to perform face or person detecting as suggested by Cheatle '861 (i.e., see paragraphs 0001 and 0059 of Cheatle '861).

Regarding claim 17, the combination of Ina '198 and Luo '339 discloses the step of computing a noise figure of merit (i.e., noted the computing steps of Fig. 11 and Fig. 14 of Ina '198, for computing "blur" figure of merit, which can be considered as "noise figure of merit" as

claimed; also considering the eye-defect/eye criteria as shown in Figs. 7-8, steps 35-36 and 45-46 of Luo '339 is also considered as computing "a noise figure of merit"); and Cheatle '861, on the other hand, teaches the computing the local standard deviation of L* to obtain a noise figure of merit (i.e., as shown in Figs. 2A/2B and paragraphs 0087-0089 of Cheatle '861; the computed CIELAB color space containing the local standard deviation of L* is used to determine the "blur/Weak edges" figure of merit as claimed); and determining if the noise figure of merit (i.e., "blur/Weak edges" figure of merit as disclosed in paragraph 0089 of Cheatle '861) falls within a noise threshold range (i.e., as discussed in paragraph 0089 of Cheatle '861, the regions having the computed blur/Weak edges" values is compared with the threshold value to perform the are growing and the region merging process).

In view of this, having the combination of Ina '198, and Luo '339 and discussed above and further teaching of Cheatle '861, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to provide a teaching of Cheatle '861 to the combination of Ina '198 and Luo '339 for the purpose of automatically cropping of electronic images in the camera to perform face or person detecting as suggested by Cheatle '861 (i.e., see paragraphs 0001 and 0059 of Cheatle '861).

Regarding claim 18, the combination of Ina '198 and Luo '339 discloses the step of computing a contrast figure of merit (i.e., noted the computing steps 35-36 of Fig. 7 and steps 45-46 of Fig. 8 of Luo '339, for computing "high-intensity/Peak value" figure of merit); and Cheatle '861, on the other hand, teaches the computing the overall standard deviation of L* to obtain a contrast figure of merit (i.e., as shown in Figs. 1 and 2A/2B of Cheatle '861 show the computing of the overall standard deviation of L* of CIELAB color space to determine "colour

difference/contrast" figure of merit; see paragraphs 0086 & 0089) is computed in the camera system 1 to obtain a contrast figure of merit (i.e., as discussed in paragraph 0089 of Cheatle '861, the computed CIELAB color space containing the means of L* is used to determine the "low-colour/contrast" figure of merit as claimed); and determining if the contrast figure of merit (i.e., "low-colour" figure of merit as disclosed in paragraph 0089 of Cheatle '861) falls within a contrast threshold range (i.e., as discussed in paragraph 0089 of Cheatle '861, the regions having the computed low-colour/contrast differences values is compared with the threshold value to perform the region merging process).

In view of this, having the combination of Ina '198, and Luo '339 and discussed above and further teaching of Cheatle '861, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to provide a teaching of Cheatle '861 to the combination of Ina '198 and Luo '339 for the purpose of automatically cropping of electronic images in the camera to perform face or person detecting as suggested by Cheatle '861 (i.e., see paragraphs 0001 and 0059 of Cheatle '861).

Regarding claim 27, the combination of Ina '198, Luo '339 and Cheatle '861 clearly show the well-known method for computing face quality of figure of merit by computing a brightness figure of merit (i.e., noted the computation to determine "high intensity/peak" value as discussed in Figs. 7-8 of Luo '339), a noise level figure of merit (i.e., as discussed in Fig. 11 of Ina '198, the computing steps for determining the blur in the captured image is considered as "computing a noise level figure of merit" as claimed), and a contrast figure of merit (i.e., as shown in Figs. 7-8, the steps 35-36 and 45-46 of Luo '339 for determining the eye-defect/eye criteria also including the step of computing to compensate brightness the color difference

images, thus, this color compensation steps must include "a contrast figure of merit" as claimed; in addition, Cheatle '861 also teaches the computing for a contrast figure of merit in paragraphs 0018, 0053 and 00111) and a checking for a presence or an absence of red eye (i.e., noted form the teaching of Luo '339 that the red eye effect is detect respectively to improved the image quality; see Figs. 6-8 and col. 7, lines 15+ of Luo '339). In view of this, computing brightness, noise, contrast and red eye is considered well known in the art as evidenced by the combined teaching of Ina '198, Luo '339 and Cheatle '861, thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to includes such features to improve the quality of image captured by the digital camera of Ina '198.

III. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ina '198 in view of Luo '339 as applied to claims as discussed above, and further in view of Lin et al. (U.S. 6,016,354).

Regarding claim 19, although the combination of Ina '198 and Luo '339 shows the step of detecting facial image data from the captured image (i.e., see col. 7, lines 45+ and col. 8, lines 5+ of Ina '198), the combination of Ina '198 and Luo '339 does not explicitly show the steps of converting the detected facial image data into a binary mask of only white and black pixels, wherein the white pixels represent pixels of red color and the black pixels represent pixels of colors other than red; and checking the binary mask for presence of white pixels as claimed.

However, the above-mentioned claimed limitations are well known in the art as evidenced by Lin '354. In particular, Lin '354 teaches the steps of converting the detected facial

image data into a binary mask of only white and black pixels, wherein the white pixels represent pixels of red color and the black pixels represent pixels of colors other than red; and checking the binary mask for presence of white pixels (col. 3, lines 15+, col. 5, lines 5+ and col. 6, lines 1+) as claimed.

In view of the above, having the system of Ina '198 and then given the well-established teaching of Lin '354, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ina '198 as taught by Lin '354, since Lin '354 states at col. 2, lines 10+ that such a modification would automatically reduce redeye in an image with minimal user intervention.

(10) Response to Argument

Regarding claim 14, in page 8 of the brief, the Appellant's alleged, "Ina et al fail to disclose that ***the photo quality of a captured image is checked in-camera***" as claimed in claim 14 of the present claimed invention.

In response, the Examiner respectfully disagrees because the main purpose of using the image memory 98a/98b and the processor 92 in the camera system as shown in Fig. 2 is to check captured the photo quality (i.e., relative motion blur of the captured images) of film images captured by the camera. This photo quality verification process in clearly processed ***in camera*** as claimed before presenting the resultant image to the user by displaying at the display device (40) as shown in Fig. 14. To support the Examiner's position, the Appellant's attention is directed to the Figs. 7-14 of Ina '198. In particular, the images stored in the memory 98a/98b are combined by the processor 92 **to check, in camera, the photo quality of the captured image to**

determined if the photo quality is acceptable (i.e., see col. 8, lines 5-20) as recited in present claimed invention. In view of this, it is cleared that the resultant image 134 is processed, in camera, to check the photo-quality to determine whether or not the image is blurred.

In page 10 of the brief, the Appellant's alleged, Ina '198 does not "compute a face quality figure of merit for the captured image" as recited in present claimed invention.

In response, the Examiner respectfully disagrees because as discussed above, the image processor 92 and the controller 100 used in the camera 10 can compute the face quality of merit (i.e., noted the face 28 quality as shown in Fig. 14) for the captured image by calculating the electronic exposure time for the first and second initial images 128/130 to be combined by the processor 92 to determined the face quality figure of merit to determine whether the captured image is acceptable (see col. 7, lines 40+ and col. 8, lines). In view of this, it is cleared that in order to check, in-camera, the photo quality of the captured image, the controller 100 and the processor 92 have to compute/calculate the first and second exposure time intervals 146/148 as shown in Figs. 10 and further processed by combining the first/second images 128/130 to determine the **face quality figure of merit** (i.e., the quality of face 28 captured by the camera 10 provide a resultant image 134, thus, the examiner is considering that the blur image 134 shown in Figs. 14 as the face quality figure of merit as claimed) of the captured image, thus, the processor 92 and the controller 100 are used in the camera 10 to compute a face quality figure of merit for the captured image by calculating the exposure time intervals and further processing/combining the first/second images as shown in Figs. 7-10 (i.e., see col. 10, lines 2+).

In view of the above discussion, the Examiner is considering that the controller 100 and the processor located inside the camera is used to check the photo quality (i.e., image

motion/blur verifying) by calculating/processing the first and second images (i.e., "computing" as claimed) to determine the face quality of merit (i.e., to determined whether the quality face 28 captured by the camera is acceptable) for the captured image as required by the present claimed invention.

However, Ina '198 does not explicitly state a face quality computing by comparing said computed face quality figure of merit to a threshold to determine if said face quality figure of merit exceeds said threshold as claimed.

In addition, the above-mentioned claimed limitations are well known in the art at the time of the invention as evidenced by Luo '339. In particular, Luo '339 further teaches that it is conventionally well known in the art at the time of the invention was made to **compute a face quality of merit** (i.e., computing an eye-defect in images, such as the red-eye phenomenon and **peak value** of "peak value" of eye region within the captured image; see Figs. 6-8, col. 7, lines 15+, col. 8, lines 40+, col. 11, lines 5+) for the captured image, and comparing (i.e., noted the steps 41-46 of Figs. 8) the computed face quality figure of merit (i.e., noted the computation of "face quality figure of merit", such as peak value of the eyes, as shown in Figs. 8, the step 45 is used to compared with a predetermined threshold data at the step 46) to determined if the face quality figure of merit (i.e., peak value of the eyes image data) exceeds the threshold (i.e., at steps 46 of Fig. 8, Luo '339 clearly teaches the comparing steps determine if the computed "peak value" of the eyes exceeds/above a pre-defined threshold value; see col. 11, lines 5-10).

Therefore, the Examiner asserts that Ina '198 discloses a method for assessing the photo-quality (i.e., Blur/Motion) of a captured image by checking, in-camera, by calculating the exposure of the images by using the controller 100 and processing/combining (i.e., noted the

Exposure calculating and Processing/Combining of the captured image in the camera system of Ina '198 is considered as "computing") by using the processor 92 to determined a face quality figure of merit (i.e., the detecting blur/motion of the face 28 as shown in Fig. 14), and Luo '339 teaches use of conventionally known computing and comparing steps in the camera for computing of a face quality figure of merit (i.e., computing eye-defect regions of the captured image by calculating "peak value" within the eye region; see Figs. 7 and 8, Steps 35-36 and 45-46) for the captured image; and comparing (i.e., see Fig. 8, steps 46) the computed face quality figure of merit (i.e., noted in Fig. 8, steps 45-46, that the computed "peak value" of eye region is used as "a face quality figure of merit") to a threshold to determine if the face quality figure of merit exceed the threshold (i.e., as discussed in col. 11, lines 5-10, the step 46 of Fig. 8 determines if the computed "peak value" of eye region, e.g., computed face quality figure of merit, exceeds the pre-defined threshold) so that accurate eye detection will enable enhancement and manipulation of images containing one or more human faces. For example, red-eye correction can be reliably performed (i.e., see col. 4, lines 15+ of Luo '339).

In view of the above, the Examiner continues to opinion that having the system of Ina '198 and then given the well-established teaching of Luo '339, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ina '198 as taught by Luo '339, since Luo '339 states at col. 4, lines 15+ that such a modification would enable enhancement and manipulation of images containing one or more human faces, so that, red-eye correction can be reliably performed.

Regarding claim 15, Appellant alleged "Examiner has failed to establish that claim 15 is ***prima facie*** obvious over the proposed combination of Ina '198, Luo '339 and Cheatle '861"(i.e., see page 19+ of the Brief).

In response, the Examiner respectfully disagrees because as discussed above, combination of Ina '198 and Luo '339, when considered as a whole, does in fact show present claimed invention as required by clam 14, including the use of RGB color space for the captured image (i.e., see col. 8, lines 15-25 of Luo '339). In addition, the teaching of Cheatle '861 shown the conventionally known method of detecting facial image data from the captured image data (i.e., see paragraphs 0059 of Cheatle '861); and converting the detected facial image data from RGB color space (i.e., see paragraphs 0003 of Cheatle '861) into L*a*b* color space (i.e., the CIELAB color space as discussed in paragraphs 0086+ of Cheatle '861) as required by present claimed invention.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ina '198 as taught by Cheatle '861, since Cheatle '861 states at page 2, the paragraph 0011 that such a modification would provide a more convenient method for capturing and cropping electronic images thereof. In view of this, the Examiner asserts that ***prima facie*** obvious has been established for claim 15 over the proposed combination of Ina '198, Luo '339 and Cheatle '861.

Regarding claims 16-18 and 27, Appellant alleged "the means of L*, the standard deviation of L*, and the overall standard deviation of L* are computed to respectively obtain a brightness figures of merit, a noise figure of merit, and a contrast figure of merit as claimed in

claims 16-18 and 27", and "the Examiner has failed to establish that claims 16-18 and 27 are ***prima facie*** obvious over the proposed combination of Ina '198, Luo '339 and Cheatle '861".

In response, it is noted that claim 27 of present claimed invention doe not required the use of any "standard deviation of L*" as alleged by Appellant. In fact, claim 27 merely recited computing: "a brightness figure of merit", "noise level figure of merit", "a contrast figure of merit" and "checking for a presence or an absence of red eye", and such features as proven to be obvious over the proposed combination of Ina '198, Luo '339 and Cheatle '861. In addition, it is noted that the combination of Ina '198, Luo '339 and Cheatle '861 also discloses that it is conventionally well known in the art at the time of the invention was made to compute "brightness, noise level, contrast and red eye" of the face quality of merit as required by claims 16, 17, and 18.

Regarding claim 16, the combination of Ina '198 and Luo '339 discloses the step of computing a brightness figure of merit (i.e., noted the computing steps 35-36 of Fig. 7 and steps 45-46 of Fig. 8 of Luo '339, for computing "high-intensity/Peak value" figure of merit); and Cheatle '861, on the other hand, teaches the computing the means of L* to obtain a brightness figure of merit (i.e., as shown in Figs. 1 and 2A/2B of Cheatle '861 show the computing of the means of L* ; see paragraphs 0086) is computed in the camera system 1 to obtain a brightness figure of merit (i.e., as discussed in paragraph 0089 of Cheatle '861, the computed CIELAB color space containing the means of L* is used to determine the "intensity/brightness" figure of merit as claimed); and determining if the brightness figure of merit (i.e., "intensity/brightness" figure of merit as disclosed in paragraph 0089 of Cheatle '861) falls within a brightness threshold range (i.e., as discussed in paragraph 0089 of Cheatle '861, the regions having the computed

brightness/intensity differences values is compared with the threshold value to perform the region merging process).

In view of this, having the combination of Ina '198, and Luo '339 and discussed above and further teaching of Cheatle '861, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to provide a teaching of Cheatle '861 to the combination of Ina '198 and Luo '339 for the purpose of automatically cropping of electronic images in the camera to perform face or person detecting as suggested by Cheatle '861 (i.e., see paragraphs 0001 and 0059 of Cheatle '861).

Regarding claim 17, the combination of Ina '198 and Luo '339 discloses the step of computing a noise figure of merit (i.e., noted the computing steps of Fig. 11 and Fig. 14 of Ina '198, for computing "blur" figure of merit, which can be considered as "noise figure of merit" as claimed); and Cheatle '861, on the other hand, teaches the computing the local standard deviation of L* to obtain a noise figure of merit (i.e., as shown in Figs. 2A/2B and paragraphs 0087-0089 of Cheatle '861; the computed CIELAB color space containing the local standard deviation of L* is used to determine the "blur/Weak edges" figure of merit as claimed); and determining if the noise figure of merit (i.e., "blur/Weak edges" figure of merit as disclosed in paragraph 0089 of Cheatle '861) falls within a noise threshold range (i.e., as discussed in paragraph 0089 of Cheatle '861, the regions having the computed blur/Weak edges" values is compared with the threshold value to perform the are growing and the region merging process).

In view of this, having the combination of Ina '198, and Luo '339 and discussed above and further teaching of Cheatle '861, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to provide a teaching of Cheatle '861 to the

combination of Ina '198 and Luo '339 for the purpose of automatically cropping of electronic images in the camera to perform face or person detecting as suggested by Cheatle '861 (i.e., see paragraphs 0001 and 0059 of Cheatle '861).

Regarding claim 18, the combination of Ina '198 and Luo '339 discloses the step of computing a contrast figure of merit (i.e., noted the computing steps 35-36 of Fig. 7 and steps 45-46 of Fig. 8 of Luo '339, for computing "high-intensity/Peak value" figure of merit); and Cheatle '861, on the other hand, teaches the computing the overall standard deviation of L* to obtain a contrast figure of merit (i.e., as shown in Figs. 1 and 2A/2B of Cheatle '861 show the computing of the overall standard deviation of L* of CIELAB color space to determine "colour difference/contrast" figure of merit; see paragraphs 0086 & 0089) is computed in the camera system 1 to obtain a contrast figure of merit (i.e., as discussed in paragraph 0089 of Cheatle '861, the computed CIELAB color space containing the means of L* is used to determine the "low-colour/contrast" figure of merit as claimed); and determining if the contrast figure of merit (i.e., "low-colour" figure of merit as disclosed in paragraph 0089 of Cheatle '861) falls within a contrast threshold range (i.e., as discussed in paragraph 0089 of Cheatle '861, the regions having the computed low-colour/contrast differences values is compared with the threshold value to perform the region merging process).

In view of this, having the combination of Ina '198, and Luo '339 and discussed above and further teaching of Cheatle '861, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to provide a teaching of Cheatle '861 to the combination of Ina '198 and Luo '339 for the purpose of automatically cropping of electronic

images in the camera to perform face or person detecting as suggested by Cheatle '861 (i.e., see paragraphs 0001 and 0059 of Cheatle '861).

Regarding claim 27, the combination of Ina '198, Luo '339 and Cheatle '861 clearly show the well-known method for computing face quality of figure of merit by computing a brightness figure of merit (i.e., noted the computation to determine "high intensity/peak" value as discussed in Figs. 7-8 of Luo '339), a noise level figure of merit (i.e., as discussed in Fig. 11 of Ina '198, the computing steps for determining the blur in the captured image is considered as "computing a noise level figure of merit" as claimed), and a contrast figure of merit (i.e., as shown in Figs. 7-8, the steps 35-36 and 45-46 of Luo '339 for determining the eye-defect/eye criteria also including the step of computing to compensate brightness the color difference images, thus, this color compensation steps must include "a contrast figure of merit" as claimed; in addition, Cheatle '861 also teaches the computing for a contrast figure of merit in paragraphs 0018, 0053 and 00111) and a checking for a presence or an absence of red eye (i.e., noted form the teaching of Luo '339 that the red eye effect is detect respectively to improved the image quality; see Figs. 6-8 and col. 7, lines 15+ of Luo '339).

In view of the above, computing brightness, noise, contrast and red eye is considered well known in the art as evidenced by the combined teaching of Ina '198, Luo '339 and Cheatle '861, thus, it would have been obvious to one having ordinary skill in the art at the time of the invention was made to includes such features to improve the quality of image captured by the digital camera of Ina '198.

Therefore, the Examiner continues to opinion that the combination of prior arts clearly established *prima facie* obviousness with regard to present claimed invention.

As for claim 19, Appellant alleged "the proposed combination of Ina '198, Luo '339 and Lin '354 fails to disclose all of the features in independent claim 14 and depending claim 19. The Examiner has failed to establish that claim 19 is *prima facie* obvious over the proposed combination of Ina '198, Luo '339 and Lin '354."

In response, the Examiner respectfully disagrees because for at lest the reasons as discussed above for an independent claim 14, the combination of Ina '198 and Luo '339 does in fact show what is recited in the claim 14 as being obvious to one having ordinary skill in the art at the time of the invention was made. In addition, the features recited by claim 19 is further evidenced to be obvious by the teaching of Lin '354 as described in detail in the rejection set forth above (i.e., see the rejection of claim 19 above). In this case, Lin '354 teaches the steps of converting the detected facial image data into a binary mask of only white and black pixels (i.e., see col. 3, lines 15-30), wherein the white pixels represent pixels of red color and the black pixels represent pixels of colors other than red (i.e., col. 3, lines 25-35); and checking the binary mask for presence of white pixels (i.e., see col. 5, lines 5+ and col. 6, lines 1+) as claimed.

In view of the above, the Examiner asserts that having the system of Ina '198 and then given the well-established teaching of Lin '354, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Ina '198 as taught by Lin '354, since Lin '354 states at col. 2, lines 10+ that such a modification would automatically reduce redeye in an image with minimal user intervention.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

AUNG MOE
PRIMARY EXAMINER 5/5/06

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